

# Operation Guide 3328

CASIO®

## Getting Acquainted

Congratulations upon your selection of this CASIO watch. To get the most out of your purchase, be sure to read this manual carefully and keep it on hand for later reference when necessary.

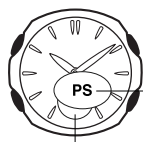
- This watch does not have a time zone that corresponds to the Greenwich Mean Time differential of -3.5 hours. Because of this, the radio-controlled timekeeping and World Time functions will not display the correct time for Newfoundland, Canada.

### Expose the watch to bright light to charge its battery before using it.

You can use this watch even as its battery is being charged by exposure to bright light.

- Be sure to read "Power Supply" for important information you need to know when exposing the watch to bright light.

### If the digital display of the watch is blank...



Digital display  
Power saving on indicator

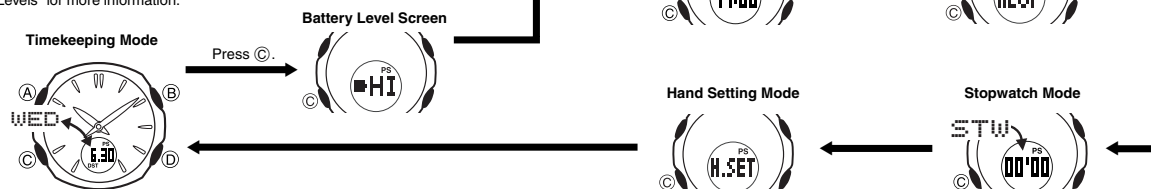
If the Power Saving on indicator is flashing on the display, it means that the Power Saving function has turned off the display to conserve power. Power Saving automatically turns off the display and enters a sleep state whenever the watch is left for a certain period where it is dark.

- The initial factory default setting is Power Saving on.
- The watch will recover from the sleep state if you move it to a well-lit area,\* if you press any button, or if you angle the watch towards your face for reading.
- \* It can take up to two seconds for the display to turn on.

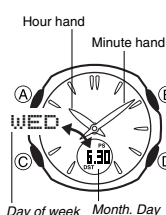
• See "Power Saving" for more information.

## General Guide

- Press (C) to change from mode to mode.
- In any mode, press (B) to illuminate the face of the watch.
- The Battery Level Screen shows the current battery level. See "Battery Power Levels" for more information.



## Radio-controlled Atomic Timekeeping



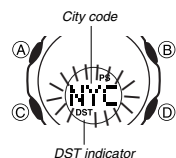
Day of week Month, Day

### Current Time Setting

This watch automatically adjusts its digital time setting in accordance with a time calibration signal. You can also perform a manual procedure to set the time and date, when necessary.

- The first thing you should do after purchasing this watch is to set your Home City, which is the city where you will normally use the watch. For more information, see "To set your Home City" below.
- When using the watch outside the range of the U.S. transmitter, you have to adjust the current time setting manually as required. See "Timekeeping" for more information about manual time setting.
- The analog time of this watch is synchronized with the digital time. Because of this, the analog time setting is automatically adjusted whenever you change the digital setting. See "Analog Timekeeping" for more information.

### To set your Home City



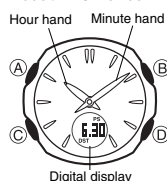
DST indicator

1. In the Timekeeping Mode, hold down (A) until the city code starts to flash, which indicates the setting screen.
2. Press (D) to scroll eastwardly through the city codes until the one you want to use as your Home City is displayed.
  - The following are the city codes of the major cities in North America where signal reception is possible.
  - LA: Los Angeles, San Francisco, Las Vegas, Seattle/Tacoma, Vancouver, Tijuana
  - DE: Denver, El Paso, Edmonton, Culiacan
  - CH: Chicago, Houston, Dallas/Fort Worth, New Orleans, Winnipeg, Mexico City
  - NY: New York, Detroit, Miami, Boston, Montreal
  - Note that this watch does not have a city code that corresponds to Newfoundland.
3. Press (A) to exit the setting screen.

### Note

- Normally, your watch should show the correct time as soon as you select your Home City code. If it does not, it should adjust automatically after the next auto receive (in the middle of the night). You can also perform manual receive or you can set the time manually.
- See the map under "Reception Range" for information about the reception range of the watch.
- The DST indicator on the display indicates that Daylight Saving Time (summer time) is in effect for the selected Home City code. If you are in an area that does not use Daylight Saving Time (summer time), turn off the DST setting.
- If CH or OFF starts to flash in place of the city code when you hold down (A) in step 1 of the above procedure, press (A) again to exit the setting screen. After that, press (D) and then perform step 1 again.

## About This Manual

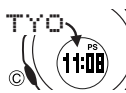


Digital display



- Button operations are indicated using the letters shown in the illustration.
- Most of the display examples in this manual show only the digital display, without the analog hands.
- Each section of this manual provides you with the information you need to perform operations in each mode. Further details and technical information can be found in the "Reference" section.

## World Time Mode



## Alarm Mode



## Hand Setting Mode



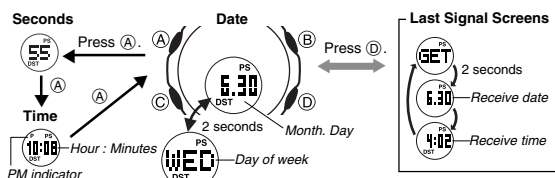
## Stopwatch Mode



## To display the digital time and last signal screens

In the Timekeeping Mode, press (A) or (D) to change the digital screen contents as shown below.

- The last signal screens show the date and time of the last successful time calibration signal reception. If time calibration signal reception has not been successful since the battery level dropped to Level 4 or since the battery was replaced, ---- is shown in place of the receive date and receive time in the last signal screens.



- The last signal screens continue to cycle on the display for about one or two minutes. After that, the Timekeeping Mode screen reappears.

## Time Calibration Signal Reception

There are two different methods you can use to receive the time calibration signal: auto receive and manual receive.

### Auto Receive

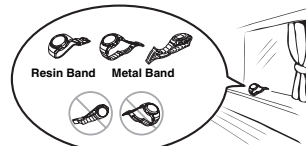
With auto receive, the watch automatically picks up the time calibration signal four times a day at midnight, 2:00 a.m., 3:00 a.m., and 4:00 a.m. For more information, see "About Auto Receive".

### Manual Receive

Manual receive lets you start a time calibration signal reception with the press of a button. For more information, see "To perform manual receive".

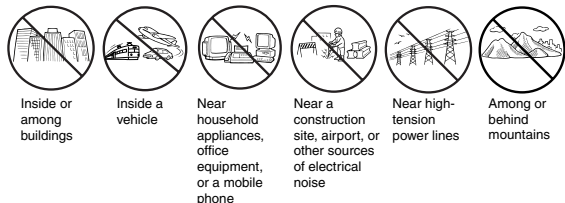
### Important!

- When getting ready to receive the time calibration signal, position the watch as shown in the nearby illustration, with its 12 o'clock side facing towards a window. Make sure there are no metal objects nearby.



- The watch should not be on its side or facing the wrong way.

- Proper signal reception can be difficult or even impossible under the conditions listed below.



- Signal reception is normally better at night than during the day.
- Time calibration signal reception takes from two to six minutes. Take care that you do not perform any button operations or move the watch during this time.



- This watch receives the time calibration signal transmitted in the U.S. (Fort Collins, Colorado).
- Under good reception conditions, signal reception is possible within a radius of about 2,000 miles (3,000 kilometers) from the Fort Collins transmitter.
- At distances further than about 600 miles (1,000 kilometers) from the Fort Collins transmitter, signal reception may not be possible during certain times of year or times of day. Radio interference may also cause problems with reception.
- See the information under "Signal Reception Troubleshooting" if you experience problems with time calibration signal reception.

## About Auto Receive

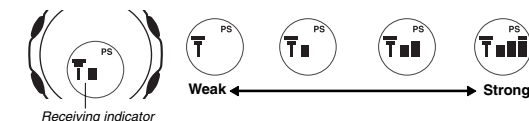
When auto receive is turned on, the watch automatically starts to receive the time calibration signal when the time in the Timekeeping Mode reaches 0:00 a.m., 2:00 a.m., 3:00 a.m., and 4:00 a.m. each day (calibration times). The watch will also perform an additional auto receive at 5:00 a.m. if none of the regularly scheduled auto receive operations are successful.

### Note

- Auto receive is turned on whenever LAX, DEN, CHI, or NYC is selected as the Home City code. You can also turn auto receive on and off manually. See "To turn auto receive on and off" for more information.
- Auto receive is performed only if the watch is in the Timekeeping Mode or World Time Mode when one of the calibration times is reached. It is not performed if a calibration time is reached while an alarm is sounding, or while you are configuring settings (while settings are flashing on the display).
- Auto receipt of the calibration signal is designed to be performed early in the morning, while you sleep (provided that the Timekeeping Mode time is set correctly). Before going to bed for the night, remove the watch from your wrist, and put it in a location where it can easily receive the signal.
- When auto receive is turned on, the watch receives the calibration signal for two to six minutes everyday when the time in the Timekeeping Mode reaches each of the calibration times. Do not perform any button operation within six minutes before or after any one of the calibration times. Doing so can interfere with correct calibration.
- Remember that reception of the calibration signal depends on the current time shown on the digital display. The receive operation will be performed whenever the display shows any one of the calibration times, regardless of whether or not the displayed time is actually the correct time.
- When two, three, or four receptions are successful, the watch uses the data of the last reception for calibration. When only one reception is successful, the watch uses the data of the successful reception.

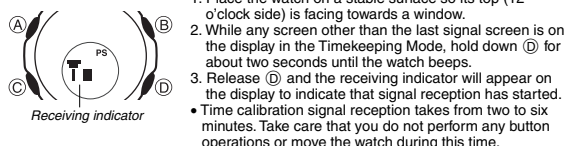
## About the Receiving Indicator

The receiving indicator shows the strength of the calibration signal being received. For best reception, be sure to keep the watch in a location where signal strength is strongest.



- Even in an area where signal strength is strong, it takes about 10 seconds for signal reception to stabilize enough for the receiving indicator to indicate signal strength.
- Use the receiving indicator as a guide for checking signal strength and for finding the best location for the watch during signal reception.

### To perform manual receive



- After signal reception is complete, the watch beeps and the display of the watch changes to the last signal screen.

### Note

- To interrupt a receive operation and return to the Timekeeping Mode, press (D).
- If the receive operation is unsuccessful, ERR appears on the display for about one or two minutes. After that, the watch returns to the Timekeeping Mode.
- You can also change from the last signal or ERR screen to the normal timekeeping screen by pressing (D).

### To turn auto receive on and off

- In the Timekeeping Mode, press (D) to display the last signal screen.
  - Hold down (A) until the current auto receive setting (ON or OFF) flashes on the display. This is the setting screen.
    - If holding down (A) does not display the setting screen, check the current Home City code setting. Press (D) to return to the Timekeeping Mode screen and then refer to "To set your Home City" for information about city codes that support signal reception.
  - Press (D) to toggle auto receive on (ON) and off (OFF).
  - Press (A) to exit the setting screen and return to the last signal screen.
- If you want to return to the Timekeeping Mode screen, press (D).

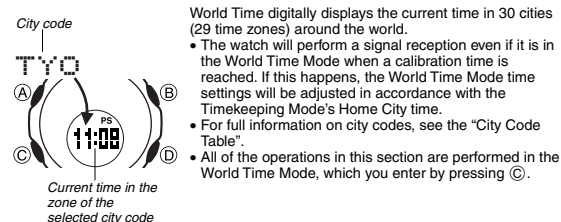
### Signal Reception Troubleshooting

Check the following points whenever you experience problems with signal reception.

Problem	Probable Cause	What you should do
Cannot perform manual receive.	<ul style="list-style-type: none"> <li>The watch is not in the Timekeeping Mode.</li> <li>Your current Home City is not one of the following city codes: LAX, DEN, CHI, or NYC.</li> <li>A button operation was performed or the watch was moved while signal reception was in progress.</li> </ul>	<ul style="list-style-type: none"> <li>Enter the Timekeeping Mode and try again.</li> <li>Select LAX, DEN, CHI, or NYC as your Home City.</li> <li>Do not perform any button operations or move the watch while signal reception is in progress.</li> <li>Check to make sure the watch is in a location where it can receive the signal.</li> </ul>
The watch does not perform auto receive.	<ul style="list-style-type: none"> <li>The watch was not in the Timekeeping Mode or World Time Mode when a calibration time arrived.</li> <li>Auto receive is turned off.</li> </ul>	<ul style="list-style-type: none"> <li>Perform manual signal receive or wait until the next auto signal receive operation is performed.</li> <li>Turn on auto receive.</li> </ul>
The time setting is incorrect following signal reception.	<ul style="list-style-type: none"> <li>If the time is one hour off, the DST setting may be incorrect.</li> <li>The Home City code setting is not correct for the area where you are using the watch.</li> </ul>	<ul style="list-style-type: none"> <li>Change the DST setting to Auto DST.</li> <li>Select the correct Home City code.</li> </ul>

- For further information, see "Important!" under "Time Calibration Signal Reception" and "Radio-controlled Atomic Timekeeping Precautions".

## World Time



### To view the time in another city

In the World Time Mode, press (D) to scroll eastwardly through city codes (time zones).

- The city code is displayed for about two seconds, and then it is replaced with the current time for that city code. Pressing (A) while the time is displayed in the World Time Mode causes the city code of the currently selected zone to appear.
- When the currently selected time zone is one that includes mostly ocean, a value indicating the zone's Greenwich Mean Time differential appears in place of a city code.
- If the current time shown for a city is wrong, check your Home City time settings and make the necessary changes.

### To toggle a city code time between Standard Time and Daylight Saving Time

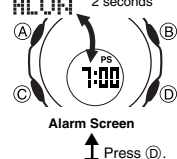
- In the World Time Mode, use (D) to display the city code (time zone) whose Standard Time/Daylight Saving Time setting you want to change.
- Hold down (A) to toggle between Daylight Saving Time (DST indicator displayed) and Standard Time (DST indicator not displayed).
- The DST indicator appears on the display whenever you display a city code for which Daylight Saving Time is turned on.

- You cannot toggle between Daylight Saving Time and Standard Time if the displayed city code is GMT or the city code that is currently selected as the Home City in the Timekeeping Mode. To change the DST setting of your Home City, use the procedure under "To change the Daylight Saving Time (summer time) setting".
- Note that the DST/Standard Time setting affects only the currently displayed city code. Other city codes are not affected.

## Alarm

On/Off status

2 seconds



Alarm Screen

Press D.

Hourly Time Signal Screen

To set the alarm time

1. In the Alarm Mode, press D to display the alarm screen.
2. Hold down A until the hour setting of the alarm time starts to flash, which indicates the setting screen.
  - This operation automatically turns on the alarm.
3. Press C to move the flashing between the hour and minute settings.
4. While a setting is flashing, use E (+) and F (-) to change it.
  - When setting the alarm time using the 12-hour format, take care to set the time correctly as a.m. (no indicator) or p.m. (P indicator).
5. Press A to exit the setting screen.

## Alarm Operation

The alarm sounds at the preset time for about 10 seconds, regardless of the mode the watch is in.

- To stop the alarm tone after it starts to sound, press any button.
- Alarm and Hourly Time Signal operations are performed in accordance with the Timekeeping Mode digital time.

## To test the alarm

In the Alarm Mode, hold down D to sound the alarm.

## To turn the alarm and the Hourly Time Signal on and off

1. In the Alarm Mode, press D to select the alarm or the Hourly Time Signal screen.
2. Press A to toggle the currently selected function on (ALON displayed) and off (ALOF displayed).
- You need to display the alarm screen or the Hourly Time Signal screen in order to check its current on/off status.

On/Off status

## Stopwatch

Minutes Seconds

1/100 second

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## Illumination

Auto light switch on indicator

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## To illuminate the face of the watch manually

In any mode (except when a setting screen is on the display), press B to illuminate the face of the watch.

- The above operation turns on illumination regardless of the current auto light switch setting.

## About the Auto Light Switch

Turning on the auto light switch causes the face to illuminate, whenever you position your wrist as described below in any mode. Note that this watch features a "Full Auto LED Light", so the auto light switch operates only when available light is below a certain level. It does not illuminate the face under bright light.

Moving the watch to a position that is parallel to the ground and then tilting it towards you more than 40 degrees causes illumination to turn on.

- Wear the watch on the outside of your wrist.



## Warning!

- Always make sure you are in a safe place whenever you are reading the face of the watch using the auto light switch. Be especially careful when running or engaged in any other activity that can result in accident or injury. Also take care that sudden illumination by the auto light switch does not surprise or distract others around you.
- When you are wearing the watch, make sure that its auto light switch is turned off before riding on a bicycle or operating a motorcycle or any other motor vehicle. Sudden and unintended operation of the auto light switch can create a distraction, which can result in a traffic accident and serious personal injury.

## To turn the auto light switch on and off

In any mode (except when a setting screen is on the display), hold down B for about two seconds to toggle the auto light switch on (LED indicator displayed) and off (LED indicator not displayed).

- The auto light switch on indicator (LED indicator) is on the display in all modes while the auto light switch is turned on.
- The auto light switch turns off automatically whenever battery power drops to Level 3.
- The auto light switch is disabled, regardless of its on/off setting, when the Hand Setting Mode's setting screen.

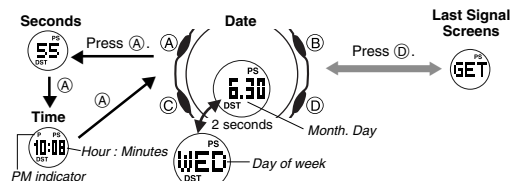
## To specify the illumination duration

1. While any screen other than the last signal screen is on the display in the Timekeeping Mode, hold down A until the city code starts to flash, which indicates the setting screen.
2. Press C three times to move the flashing to the seconds setting.
3. Press B to toggle the illumination duration setting between 3 seconds (3) and 1.5 seconds (1.5).
4. Press A to exit the setting screen.

## Timekeeping

Use the Timekeeping Mode to set and view the current time and date. This section also explains how to manually set the current date and time.

- All of the operations in this section are performed in the Timekeeping Mode, which you enter by pressing C.

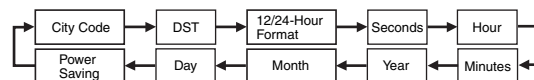


## Setting the Digital Time and Date Manually

Make sure you select your Home City code before you change the current time and date settings. World Time Mode times are all displayed in accordance with the Timekeeping Mode settings. Because of this, World Time Mode times will not be correct if you do not select the proper Home City code before setting the time and date in the Timekeeping Mode.

## To set the current digital time and date manually

1. While any screen other than the last signal screen is on the display in the Timekeeping Mode, hold down A until the city code starts to flash, which indicates the setting screen.
  - See "City Code Table" for a complete list of available city codes.
2. Press C to move the flashing in the sequence shown below to select other settings.



3. When the setting you want to change is flashing, use **(D)** to change it as described below.
- The following steps explain how to configure timekeeping settings only.

Screen	To do this:	Do this:
	Change the city code	Press <b>(D)</b> (east).
	Cycle between Daylight Saving Time (ON), Standard Time (OFF), and Auto DST (AUTO)	Press <b>(D)</b> .
	Toggle between 12-hour (12H) and 24-hour (24H) timekeeping	Press <b>(D)</b> .
	Reset the seconds to 55	Press <b>(D)</b> .
	Change the hour or minutes	Press <b>(D)</b> (to increase).
	Change the year	
	Change the month or day	

4. Press **(A)** to exit the setting screen.
- When you exit the setting screen, the analog hands are adjusted automatically to match the digital time. See "Analog Timekeeping" for more information.
  - Auto DST (AUTO) can be selected only while HNL, ANC, LAX, DEN, CHI, or NYC is selected as the Home City code. For more information, see "Daylight Saving Time (DST)" below.
  - For information about specifying how long the face of the watch remains illuminated, see "To specify the illumination duration".
  - For details about configuring settings for the Power Saving feature, see "Power Saving".

## Daylight Saving Time (DST)

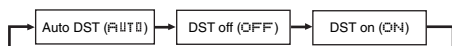
Daylight Saving Time (summer time) advances the time setting by one hour from Standard Time. Remember that not all countries or even local areas use Daylight Saving Time.

The time calibration signals include both Standard Time and DST data. When the auto DST setting is turned on, the watch switches between Standard Time and DST (summer time) automatically in accordance with the signal it receives.

- The auto DST setting can be turned on only while HNL, ANC, LAX, DEN, CHI, or NYC is selected as the Home City code.
- If you experience problems receiving the time calibration signal in your area, it is probably best to switch between Standard Time and Daylight Saving Time (summer time) manually.

## To change the Daylight Saving Time (summer time) setting

- While any screen other than the last signal screen is on the display in the Timekeeping Mode, hold down **(A)** until the city code starts to flash, which indicates the setting screen.
- Press **(C)** once and the DST setting screen appears.
- Use **(D)** to cycle through the DST settings in the sequence shown below.



4. Press **(A)** to exit the setting screen.
- The DST indicator appears on the display to indicate that Daylight Saving Time is turned on.

## Analog Timekeeping

The analog time of this watch is synchronized with the digital time. The analog time setting is adjusted automatically whenever you change the digital time.

### Note

- The hands for the analog timepiece move to adjust to a new setting whenever any of the following occurs.
  - When you change the digital time setting manually
  - When the digital time setting is changed by time calibration signal reception
  - When you change the Home City code and/or DST setting
- If the analog time does not match the digital time for some reason, use the procedure below to adjust the analog time to the digital time.
- Whenever you need to adjust both the digital and the analog time settings manually, make sure you adjust the digital setting first.
- Depending on how much the hands have to move in order to adjust to the digital time, it may take some time before they stop moving.

## To adjust the analog time



- In the Timekeeping Mode, press **(C)** five times to enter the Hand Setting Mode.
- Hold down **(A)** until the current digital time starts to flash, which indicates the analog time setting screen.
- Press **(D)** to advance the analog time setting by 20 seconds.
  - Holding down **(D)** advances the analog time setting at high speed.

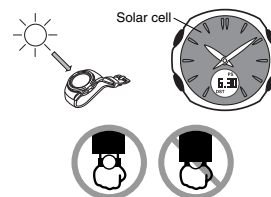
- If you need to advance the analog time setting a long way, hold down **(D)** until the time starts advancing at high speed, and then press **(B)**. This locks the high-speed hand movement, so you can release the two buttons. High-speed hand movement continues until you press any button. It will also stop automatically after the time advances 12 hours or if an alarm starts to sound.
- Press **(A)** to exit the setting screen.
- The minute hand will be adjusted slightly to match the seconds when you exit the setting screen.
- To return to the Timekeeping Mode, press **(C)**.

## Power Supply

This watch is equipped with a solar cell and a special rechargeable battery (secondary battery) that is charged by the electrical power produced by the solar cell. The illustration shown below shows how you should position the watch for charging.

**Example:** Orient the watch so its face is pointing at a light source.

- The illustration shows how to position a watch with a resin band.
- Note that charging efficiency drops when any part of the solar cell is blocked by clothing, etc.
- Normally, you should try to keep the watch outside of your sleeve as much as possible. Charging is significantly reduced if the face is only partially covered.



### Important!

- Storing the watch for long periods in an area where there is no light or wearing it in such a way that it is blocked from exposure to light can cause rechargeable battery power to run down. Make sure that the watch is normally exposed to bright light whenever possible.
- This watch uses a special rechargeable battery to store power produced by the solar cell, so regular battery replacement is not required. However, after very long use, the rechargeable battery may lose its ability to achieve a full charge. If you experience problems getting the special rechargeable battery to fully charge, contact your dealer or CASIO distributor about having it replaced.
- Never try to remove or replace the watch's special battery yourself. Use of the wrong type of battery can damage the watch.
- The current time and all other settings return to their initial factory defaults whenever battery power drops to Level 4 and when you have the battery replaced.
- Turn on the watch's Power Saving function and keep it in an area normally exposed to bright light when storing it for long periods. This helps to keep the rechargeable battery from going dead.

## Battery Power Levels

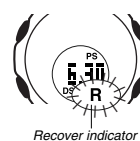
The digital display shows you the current level of the rechargeable battery's power.

- All of the watch's functions are available when **H I** (high) or **H M** (medium) is indicated on the Battery Level Screen.

Level	Digital Display	Function Status
1		All functions enabled.
2		All functions enabled.
3 (Charge soon alert)	Charge indicator	Except for internal timekeeping and the charge indicator (C), all functions and display indicators are disabled.
4		All functions disabled.

- Level 1 and Level 2 are indicated on the Battery Level Screen only. Level 3 and Level 4 are indicated in all modes.
- The flashing charge indicator (C) at Level 3 tells you that battery power is very low, and that exposure to bright light for charging is required as soon as possible.
- When the battery level approaches Level 3, the analog hands move automatically to the 12 o'clock position. Charge the battery as soon as possible when this happens. All of the digital screen indicators flash while the analog hands are in motion.
- When battery power is at Level 3, time calibration signal reception are disabled.
- At Level 4, all functions are disabled and settings return to their initial factory defaults. Functions are enabled once again after the rechargeable battery is charged, but you need to set the digital time and date, after the battery reaches Level 3 from Level 4. You will not be able to set any of the other settings until the battery reaches Level 2 after dropping to Level 4.
- Display indicators reappear as soon as the battery is charged from Level 4 to Level 3.
- If the analog time and digital time do not match after the watch recovers to Level 2 from Level 3 or Level 4, adjust the analog hand setting so it matches the digital time.
- Leaving the watch exposed to direct sunlight or some other very strong light source can cause the digital display to temporarily show a reading that is higher than the actual battery level. The correct battery level should be indicated after a few minutes.

## Recover Indicator



If you use illumination or alarms a number of times during a short period, the recover indicator (R) appears on the display and the following operations become disabled until battery power recovers.

*Illumination; Beeper tone; Coordination between digital and analog timekeeping; Time calibration signal reception*  
After some time, battery power will recover and the recover indicator will disappear, indicating that the above functions are enabled again.

- If the battery drops to Level 3 while the recover indicator is on the display, the Battery Level Screen will indicate **L 3**. Charge the battery as soon as possible.
- If the recover indicator appears frequently, it probably means that remaining battery power is low. Leave the watch in bright light to allow it to charge.

## Charging Precautions

Certain charging conditions can cause the watch to become very hot. Avoid leaving the watch in the areas described below whenever charging its rechargeable battery. Also note that allowing the watch to become very hot can cause its liquid crystal display to black out. The appearance of the LCD should become normal again when the watch returns to a lower temperature.

### Warning!

Leaving the watch in bright light to charge its rechargeable battery can cause it to become quite hot. Take care when handling the watch to avoid burn injury. The watch can become particularly hot when exposed to the following conditions for long periods.

- On the dashboard of a car parked in direct sunlight
- Too close to an incandescent lamp
- Under direct sunlight



## Charging Guide

After a full charge, timekeeping remains enabled for up to about nine months.

- The following table shows the amount of time the watch needs to be exposed to light each day in order to generate enough power for normal daily operations.

Exposure Level (Brightness)	Approximate Exposure Time
Outdoor Sunlight (50,000 lux)	8 minutes
Sunlight Through a Window (10,000 lux)	30 minutes
Daylight Through a Window on a Cloudy Day (5,000 lux)	48 minutes
Indoor Fluorescent Lighting (500 lux)	8 hours

- Since these are the specs, we can include all the technical details.

- Watch is not exposed to light
- Internal timekeeping
- Display on 18 hours per day, sleep state 6 hours per day
- 1 light operation (1.5 seconds) per day
- 10 seconds of alarm operation per day
- 4 calibration receptions per day

- Stable operation is promoted by frequent charging.

## Recovery Times

The table below shows the amount exposure that is required to take the battery from one level to the next.

Exposure Level (Brightness)	Approximate Exposure Time			
	Level 4	Level 3	Level 2	Level 1
Outdoor Sunlight (50,000 lux)	3 hours	42 hours	12 hours	
Sunlight Through a Window (10,000 lux)	7 hours	159 hours	44 hours	
Daylight Through a Window on a Cloudy Day (5,000 lux)	11 hours	257 hours	71 hours	
Indoor Fluorescent Lighting (500 lux)	124 hours		---	

- The above exposure time values are all for reference only. Actual required exposure times depend on lighting conditions.

## Reference

This section contains more detailed and technical information about watch operation. It also contains important precautions and notes about the various features and functions of this watch.

## Power Saving

When turned on, Power Saving automatically enters a sleep state whenever the watch is left for a certain period in an area where it is dark. The table below shows how watch functions are affected by Power Saving.

- There are actually two sleep state levels: "display sleep" and "function sleep".

Elapsed Time in Dark	Operation
60 to 70 minutes (Display Sleep)	Digital display off, but all functions are enabled and the power saving on indicator flashes on the display
6 or 7 days (Function Sleep)	<ul style="list-style-type: none"> <li>Digital display off, but the power saving on indicator flashes on the display</li> <li>All functions, including analog timekeeping, disabled</li> <li>Internal timekeeping maintained</li> </ul>

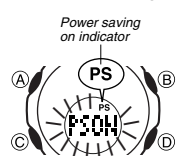
- Wearing the watch inside your sleeve can cause it to enter the sleep state.
- The watch will not enter the sleep state while the digital time is between 6:00 AM and 9:59 PM. If the watch is already in the sleep state when the digital time reaches 6:00 AM, however, it will remain in the sleep state.
- The analog hands move to the 12 o'clock position when the watch enters the function sleep state. If the analog time and digital time do not match after the watch recovers from the function sleep state, adjust the analog hand setting so it matches the digital time.
- The watch will not enter the sleep state while it is in the Stopwatch Mode.

## To recover from the sleep state

Perform any one of the following operations.

- Move the watch to a well-lit area. It can take up to two seconds for the display to turn on.
- Press any button.
- Angle the watch towards your face for reading.

## To turn Power Saving on and off



- While any screen other than the last signal screen is on the display in the Timekeeping Mode, hold down (A) until the city code starts to flash, which indicates the setting screen.
  - Press (C) nine times until the Power Saving on/off screen appears.
  - Press (D) to toggle Power Saving on (P-SOFF) and off (P-SOFF).
  - Press (A) to exit the setting screen.
- The Power Saving on indicator is on the display in all modes while Power Saving is turned on.

## Auto Return Features

- The watch automatically returns to the Timekeeping Mode if you do not perform any button operation for two or three minutes while the Battery Level Screen is displayed, or while in the Alarm, or Hand Setting Mode.
- If you leave a screen with flashing digits on the display for two or three minutes without performing any operation, the watch automatically exits the setting screen.

## Scrolling

The (B) and (D) buttons are used in various modes and setting screens to scroll through data on the display. In most cases, holding down these buttons during a scroll operation scrolls through the data at high speed.

## Initial Screens

When you enter the Timekeeping, World Time, or Alarm Mode, the data you were viewing when you last exited the mode appears first.

## Radio-controlled Atomic Timekeeping Precautions

- Strong electrostatic charge can result in the wrong time being set.
- Even when the watch is within the reception range of the transmitter, signal reception will be impossible if the signal is blocked by mountains or other geological formations between the watch and signal source.
- Signal reception is affected by weather, atmospheric conditions, and seasonal changes.
- The time calibration signal bounces off the ionosphere. Because of this, such factors as changes in the reflectivity of the ionosphere, as well as movement of the ionosphere to higher altitudes due to seasonal atmospheric changes or the time of day may change the reception range of the signal and make reception temporarily impossible.
- Even if the time calibration signal is received properly, certain conditions can cause the time setting to be off by up to one second.
- The current time setting in accordance with the time calibration signal takes priority over any time settings you make manually.
- The watch is designed to automatically update the date and day of the week for the period January 1, 2000 to December 31, 2099. Setting of the date by the time calibration signal cannot be performed starting from January 1, 2100.
- This watch can receive signals that differentiate between leap years and non-leap years.
- Though this watch is designed to receive both time data (hour, minutes, seconds) and date data (year, month, day), certain signal conditions can limit reception to time data only.
- Normally, the signal reception date shown by the last signal screen is the date data included in the received time calibration signal. When only time data is received, however, the last signal screen shows the date as kept in the Timekeeping Mode at the time of signal reception.
- If you are in an area where proper time calibration signal reception is impossible, the watch keeps time within  $\pm 15$  seconds a month at normal temperature.
- If you have problems with proper time calibration signal reception or if the time setting is wrong after signal reception, check your current city code, DST (summer time) settings, and auto receive setting. The following are the initial factory defaults for these settings.  
City code (NYC/New York); DST (Auto switching); Auto receive (On/On)

## Timekeeping

- Resetting the seconds to 00 while the current count is in the range of 30 to 59 causes the minutes to be increased by 1. In the range of 00 to 29, the seconds are reset to 00 without changing the minutes.
- The year can be set in the range of 2000 to 2099. The day of the week is calculated automatically in accordance with the date.
- The watch's built-in full automatic calendar makes allowances for different month lengths and leap years. Once you set the date, there should be no reason to change it except after you have the watch's battery replaced or when battery power drops to Level 4.
- The current time for all city codes in the Timekeeping Mode and World Time Mode is calculated in accordance with the Greenwich Mean Time (GMT) differential for each city, based on your Home City time setting.
- GMT differential is calculated by this watch based on Universal Time Coordinated (UTC) data.  
\* UTC is the world-wide scientific standard of timekeeping. It is based upon carefully maintained atomic (cesium) clocks that keep time accurately to within microseconds. Leap seconds are added or subtracted as necessary to keep UTC in sync with the Earth's rotation. The reference point for UTC is Greenwich, England.

## 12-hour/24-hour Timekeeping Formats

The 12-hour/24-hour timekeeping format you select in the Timekeeping Mode is also applied in all other modes.

- With the 12-hour format, the P (PM) indicator appears on the display for times in the range of noon to 11:59 p.m. and no indicator appears for times in the range of midnight to 11:59 a.m.
- With the 24-hour format, times are displayed in the range of 0:00 to 23:59, without any indicator.

## Illumination Precautions

- The illumination provided by the light may be hard to see when viewed under direct sunlight.
- Illumination automatically turns off whenever an alarm sounds.
- Frequent use of illumination shortens the battery operating time.

## Auto light switch precautions

- Wearing the watch on the inside of your wrist, movement of your arm, or vibration of your arm can cause frequent activation of the auto light switch and illumination of the face of the watch. To avoid running down the battery, turn off the auto light switch whenever engaging in activities that might cause frequent illumination of the face.
- Note that wearing the watch under your sleeve while the auto light switch is turned on can cause frequent illumination of the face and can run down the battery.

More than 15 degrees too high



- Illumination may not turn on if the face of the watch is more than 15 degrees above or below parallel. Make sure that the back of your hand is parallel to the ground.
- Illumination turns off after the preset illumination duration (see "To specify the illumination duration"), even if you keep the watch pointed towards your face.
- Static electricity or magnetic force can interfere with proper operation of the auto light switch. If illumination does not turn on, try moving the watch back to the starting position (parallel with the ground) and then tilt it back towards your face again. If this does not work, drop your arm all the way down so it hangs at your side, and then bring it back up again.
- Under certain conditions, illumination may not turn on until about one second after you turn the face of the watch towards you. This does not necessarily indicate malfunction of the auto light switch.
- You may notice a very faint clicking sound coming from the watch when it is shaken back and forth. This sound is caused by mechanical operation of the auto light switch, and does not indicate a problem with the watch.

**City Code Table**

City Code	City	GMT Differential	Other major cities in same time zone
-11		-11.0	Pago Pago
HNL	Honolulu	-10.0	Papeete
ANC	Anchorage	-09.0	Nome
LAX	Los Angeles	-08.0	San Francisco, Las Vegas, Vancouver, Seattle/Tacoma, Dawson City, Tijuana
DEN	Denver	-07.0	El Paso, Edmonton, Culiacan
CHI	Chicago	-06.0	Houston, Dallas/Fort Worth, New Orleans, Mexico City, Winnipeg
NYC	New York	-05.0	Montreal, Detroit, Miami, Boston, Panama City, Havana, Lima, Bogota
CCS	Caracas	-04.0	La Paz, Santiago, Port of Spain
RIO	Rio De Janeiro	-03.0	Sao Paulo, Buenos Aires, Brasilia, Montevideo
-02		-02.0	
-01		-01.0	Praia
GMT			
LON	London	+00.0	Dublin, Lisbon, Casablanca, Dakar, Abidjan
PAR	Paris		
BER	Berlin	+01.0	Milan, Rome, Madrid, Amsterdam, Algiers, Hamburg, Frankfurt, Vienna, Stockholm
ATH	Athens		
CAI	Cairo	+02.0	Helsinki, Istanbul, Beirut, Damascus, Cape Town
JRS	Jerusalem		
JED	Jeddah	+03.0	Kuwait, Riyadh, Aden, Addis Ababa, Nairobi, Moscow
THR	Tehran	+03.5	Shiraz
DXB	Dubai	+04.0	Abu Dhabi, Muscat
KBL	Kabul	+04.5	
KHI	Karachi	+05.0	Male
DEL	Delhi	+05.5	Mumbai, Kolkata
DAC	Dhaka	+06.0	Colombo
RGN	Yangon	+06.5	
BKK	Bangkok	+07.0	Jakarta, Phnom Penh, Hanoi, Vientiane
HKG	Hong Kong	+08.0	Singapore, Kuala Lumpur, Beijing, Taipei, Manila, Perth, Ulaanbaatar
SEL	Seoul		
TYO	Tokyo	+09.0	Pyongyang
ADL	Adelaide	+09.5	Darwin
SYD	Sydney	+10.0	Melbourne, Guam, Rabaul
NOU	Noumea	+11.0	Port Vila
WLG	Wellington	+12.0	Christchurch, Nadi, Nauru Island

• Based on data as of December 2003.